

# A New Species of *Coluzea* (Gastropoda: Turbinellidae) from off Southeastern Africa

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## ABSTRACT

*Coluzea juliae*, a new species of Columbariinae, is described from bathyal depths off northeastern South Africa and southern Mozambique. It appears to be most closely related to *Coluzea liriope* Harasewych, 1986, from Makassar Strait in Indonesia.

**Key words:** Gastropoda; Turbinellidae; Columbariinae; *Coluzea*; Mozambique; South Africa; Indian Ocean.

## INTRODUCTION

Although the genus *Coluzea* Allen, 1926 is represented in Middle-Eocene shallow-water fossil beds of Europe, post-Eocene records are restricted to deep water facies of New Zealand. In the Recent fauna it is restricted to bathyal depths along continental margins of the Indian and southwestern Pacific Oceans. The southern coast of Africa contains the richest and most diverse Recent columbariine fauna known to date, to which is added the new species described herein.

Repositories of examined specimens are indicated by the following abbreviations:

DMNH—Delaware Museum of Natural History, Wilmington  
NM—Natal Museum, Pietermaritzburg  
SAM—South African Museum, Cape Town  
USNM—National Museum of Natural History, Smithsonian Institution, Washington, DC

## SYSTEMATICS

Genus *Coluzea* Allen, 1926

*Coluzea juliae* new species  
(figures 1-4; table 1)

**Description:** Shell (figures 1-3) large for genus (to 89 mm), thin, fusiform. Spire angle 37.0°-44.5°. Protoconch deviated paucispiral, of 1½ smooth, bulbous whorls. Transition to teleoconch gradual, marked by development of peripheral keel and broad axial ribs within ½ whorl. Teleoconch with up to 9 whorls. Suture abutting

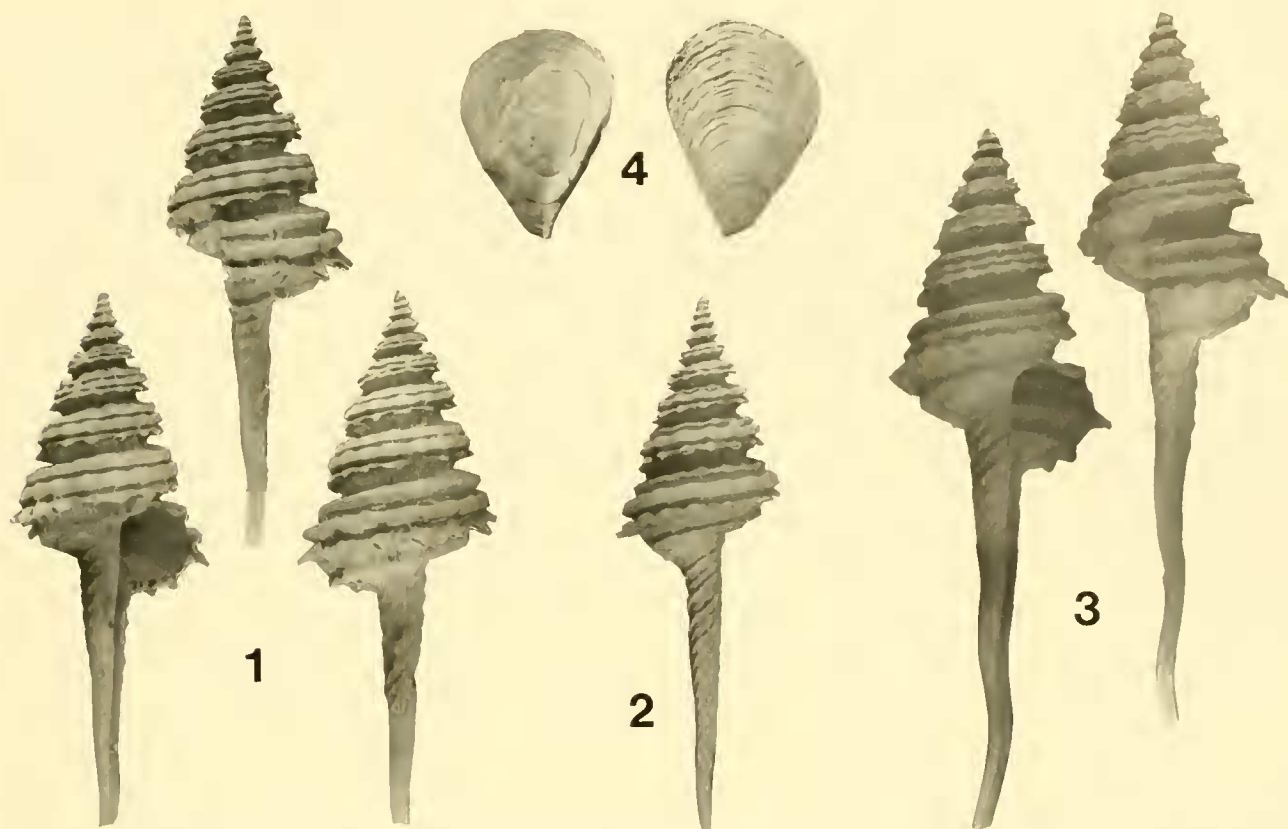
pronounced spiral cord anterior to whorl periphery. Spiral sculpture of 3 equal threads or cords between suture and periphery on early whorls. Cord nearest suture decreasing in prominence or disappearing by fifth post-nuclear whorl; second and usually third spiral cords concomitantly thickening, each forming broad band. Second band sufficiently elevated to form channeled suture. Two strongly pronounced spiral cords between whorl periphery and siphonal canal. Fourteen to 22 spiral cords along proximal ¾ of siphonal canal, decreasing in prominence distally. Early whorls with 11-13 axial ribs/whorl, each forming tubercle along periphery. Axial ribs becoming less pronounced and tubercles forming short, open, anteriorly-directed spines on third post-nuclear whorl. Body whorl with 15-16 spines. Aperture roughly semi-circular. Outer lip thin, furrowed beneath periphery and major cords. Inner lip smooth due to dissolution of portion of outermost layer from parietal region. Siphonal canal long, stout, axial, occasionally sinuate distally (figure 3). Shell color uniformly white. Periostracum thick, straw-colored to tan, axially-bladed. Operculum (figure 4) corneous, strongly ovate, with two straight sides converging on terminal nucleus. Soft parts unknown.

**Etymology:** This species is named in honor of my wife Julia, in recognition of her frequent assistance and support of my research.

**Type locality:** Off Inhaca Island, Mozambique, 26°07'S, 34°11'E, in 600-665 m, Anton Bruun Cruise 8, station 397C, September 29, 1964.

**Holotype:** USNM 718510, length 67.9 mm.

**Paratypes:** Paratypes 1-2, USNM 860174, from the type locality; paratype 3, SAM A36257, off northern Natal, South Africa, 27°12.2'S, 32°56.0'E, in 660 m, May 20, 1976; paratypes 4-6, SAM A36256 off northern Natal, South Africa, 27°14.8'S, 32°54.6'E, in 680-700 m, May 20, 1976; paratypes 7-8, DMNH 1906S, trawled, deep water off Zululand coast, South Africa, December, 1967; paratypes 9-11, NM 5740, off Natal, South Africa, May, 1970; paratype 12, Gratz collection, off Natal, South Africa, 200-300 fms [366-548 m].



Figures 1-4. *Coluzea juliae* new species. 1. Holotype, USNM 718510, off Inhaca Island, Mozambique, 26°07'S, 34°11'E, in 600-665 m, Anton Bruun Cruise 8, station 397C, September 29, 1964 (1.0 ×). 2. Paratype 3, SAM A36257, off northern Natal, South Africa, 27°12.2'S, 32°56.0'E, in 660 m, May 20, 1976 (1.0 ×). 3. Paratype 9, NM 5740, off Natal, South Africa, May, 1970 (1.0 ×). 4. Operculum of holotype (2.5 ×).

**Distribution:** This species is known only from the upper continental slope off southernmost Mozambique and northeastern Republic of South Africa. The confirmed bathymetric range is 548-660 m.

**Comparative remarks:** *Coluzea juliae* new species most closely resembles *C. liriopae* Harasewych, 1986, a species inhabiting similar depths along the Makassar Strait of Indonesia, but differs in having: a periphery that is sharply keeled and lined with long, narrow, open, anteriorly-directed spines rather than a rounded periphery with low nodular spines; two extremely pronounced raised

corde between the periphery and siphonal canal, rather than four weaker cords; and a crenulated outer lip rather than one with a rectangular posterior margin. This new species is also similar to *Coluzea eastwoodae* (Kilburn, 1971), with which it overlaps in geographic and bathymetric ranges, but can be readily distinguished on the basis of its characteristic spiral sculpture between the suture and periphery.

**Discussion:** Of the 13 specimens of *Coluzea juliae* new species examined, 10 had repaired breaks along the proximal portion of the siphonal canal, indicating crab pre-

Table 1. *Coluzea juliae* new species. Measurements of shell characters. Linear measurements in mm (n = 10, except for measurements involving the siphonal canal, where n = 7).

Character	Mean	Range	SD
Shell length (apex to proximal end of siphonal canal)	41.3	33.1-51.3	6.0
Aperture length	13.8	10.6-17.3	2.3
Aperture length/shell length	0.33	0.31-0.36	0.02
Siphonal canal length	34.5	28.2-45.8	6.7
Siphonal canal length/aperture length	2.82	2.44-3.34	0.31
no. whorls teleoconch	8.6	8.0-9.0	0.4
no. axial ribs/spines on body whorl	16.6	14-23	2.7
Spire angle	41.5°	37.0°-44.5°	2.2°

dition. The thick spiral cords characteristic of this species strengthen the shell and increase its resistance to crushing and peeling predators. These expanded cords also result in an altered apertural shape that accommodates a taller, more voluminous mantle cavity, especially in the regions that contain the hypobranchial gland, pallial gonoducts and rectum. Similar modifications of apertural shape occur in *Coluzea liriopae* (Harasewych, 1986: pl. 2, figs. 3, 4), and to a lesser extent in *Coluzea cingulata* (Martens, 1901) (see Darragh, 1969: pl. 6, figs. 106, 116) and in the early whorls of *C. distephanotis* (Melvill, 1891) (see Harasewych, 1986: pl. 1, figs. 1-3). The similarities between *Coluzea juliae* new species and *C. liriopae* are sufficiently compelling to suggest a close relationship between these two species. The relationships of these species to *C. cingulata* and *C. distephanotis* are less clear. The dorsal expansion of the aperture in the early whorls of *C. distephanotis* occurs anterior to the periphery, and may be a convergent adaptation to increase the volume of the mantle cavity.

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